REMARKS/ARGUMENTS

Claims 1-10 are pending in the present application. Claims 1-10 are amended. Support for the amendments may be found at least in the Applicants' specification on page 6, lines 17-27, page 15, lines 20-25, page 16, lines 1-13, and Figure 4A. Reconsideration of the claims is respectfully requested.

I.   Examiner Interview

Applicants thanks Examiner Taylor for all the courtesies extended Applicant's representative during the July 24, 2007 telephone interview. The Examiner and the undersigned attorney discussed the rejection under 35 U.S.C. § 101 vis-à-vis claims 1-9. The Examiner indicated that the amendments to the claims would overcome this rejection.

The Examiner and the undersigned attorney additionally discussed the rejection under 35 U.S.C. § 103 vis-à-vis claims 1-9. The Examiner indicated that the amendments to the claims would overcome the rejection. The arguments discussed, as well as additional reasons Applicants respectfully submit that the claims are in condition for allowance, are set forth below.

II.   35 U.S.C. § 101: Asserted Non-Statutory Subject Matter

The Examiner rejected claims 1, 2, 7, 8, and 10 under 35 U.S.C. § 101 as directed towards non-statutory subject matter. During the interview held July 24, 2007, the Examiner agreed the amendments to claims 1, 2, 7, and 8 would overcome all rejections to the claims under 35 U.S.C. §101 for claims 1-9.

Amended claim 10 reads:

> 10.   (Currently Amended) A data processing system for managing a multicast messaging system for managing subscription requests, the data processing system comprising:
> a bus;
>   a memory connected to the bus, wherein the memory includes computer program code; and
>   a processor coupled to the bus, wherein the processor executes the computer program code to a message broker; a plurality of publishers publishing information to the message broker;
>   a plurality of subscribers subscribing to information received from one or more publishers, the subscribers comprising:
>   the message broker, the message broker comprising:
>   a matching engine, wherein the matching engine receives a subscription request pointing to topic information in which a requesting subscriber is interested, the topic information defining a specific topic within a topic hierarchy;
>   a parser wherein the parser parses the subscription request to determine if the request includes a wildcard, wherein a topic string received as the subscription request is parsed into a prefix and a remainder, wherein the

prefix comprises everything in the topic string preceding the wildcard and, wherein the parser locates a node in the topic tree that is defined by the prefix wherein the node represents a topic immediately preceding the wildcard; and
an instructor, wherein the instructor instructs the requesting subscriber to listen on a multicast address associated with the topic in the topic hierarchy which precedes the wildcard by associating the subscriber with the node in the topic tree, wherein the node is defined by the prefix.

Claim 10 recites a data processing system that comprises a processor, a bus, and a memory. Therefore, claim 10 could not be reasonably interpreted as "software per se". As the claims now fall within a statutory category of invention, Applicants respectfully submit that the rejection of claims 1,2,7,8, and 10 under 35 U.S.C. § 101 has been overcome.

III.   35 U.S.C. § 103: Asserted Obviousness

The Examiner has rejected claims 1-10 as obvious under 35 U.S.C. § 103 in view of *Omoigui*, System and Method for Knowledge Retrieval, Management, Delivery and Presentation, U.S. Patent Application 2003/0126136, (June 24, 2002) (hereinafter "*Omoigui*"), and *Mane*, Managing Multicast Sessions, U.S. Patent Application 2003/0195964, (April 10, 2002) (hereinafter "*Mane*"). This rejection is respectfully traversed.

Regarding claim 4, the Examiner states:

> While Omoigui teaches the use of the multicast protocol and sending information messages associated with a topic hierarchy that precedes a wildcard, Omoigui fails to teach wherein the subscriber is instructed to listen on an associated multicast address.
> Mane's system looks for requests that include certain information and instructs the requesting subscriber to listen on a multicast address, where the address is associated with and based on information contained in the request.
> It would have been obvious to one of ordinary skill in the art, at the time that invention was made, to have combined Omoigui and Mane to provide the multicast listening of Mane in the system of Omoigui, because doing so would improve the automatic and intelligent discoverability of search results desired in Omoigui's information system.

Office Action, May 18, 2007, page 4.

During the interview on July 24, 2007, the Examiner indicated that the amendments to claim 4 overcome all rejections to the claims under 35 U.S.C. §103. Moreover, the Examiner bears the burden of establishing a *prima facie* case of obviousness based on prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). The prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Royka*, 490 F.2d 981 180 USPQ 580 (CCPA 1974). In determining obviousness, the scope and content of the prior art are

determined; differences between the prior art and the claims at issue are... ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or non-obviousness of the subject matter is determined. *Graham v. John Deere Co.*, 383 U.S. 1 (1966). Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. *KSR Int'l. Co. v. Teleflex, Inc.*, No. 04-1350 (U.S. Apr. 30, 2007). Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *Id.* (citing *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006)). In this case, *Omoigui* and *Mane* do not make the claimed invention obvious.

III.A. The Proposed Combination Does Not Teach or Suggest All of the Features of Amended Claim 4.

Claim 4, as amended, recites as follows:

> 4.   A computer implemented method for managing subscription requests in a multicast messaging system, the messaging system comprising a plurality of publishers publishing information to a broker and a plurality of subscribers subscribing to information received from one or more publishers, the method comprising the steps of:
> receiving a subscription request pointing to topic information in which the requesting subscriber is interested, the topic information defining a specific topic within a topic hierarchy;
> parsing the subscription request to determine if the request includes a wildcard, wherein a topic string received as the subscription request is parsed into a prefix and a remainder, wherein the prefix comprises everything in the topic string preceding the wildcard;
> locating the node in the topic tree defined by the prefix, wherein the node represents a topic immediately preceding the wildcard; and
> instructing the requesting subscriber to listen on a multicast address associated with the topic in the topic hierarchy which precedes the wildcard by associating the subscriber with the node in the topic tree, wherein the node is defined by the prefix.

Independent claim 1, 7, and 10 recite similar subject matter. The proposed combination of *Omoigui* and *Mane*, considered as a whole, does not teach the claimed feature of, "a topic string received as the subscription request is parsed into a prefix and a remainder, wherein the prefix comprises everything in the topic string preceding the wildcard; locating a node in the topic tree defined by the prefix, wherein the node represents a topic immediately preceding the wildcard; and associating the subscriber with the node in the topic tree, wherein the node is defined by the prefix."

Omoigui teaches:

> 0459] The link templates essentially allow the user to navigate predicate for the current object type using predefined filters, thus allowing the user to avoid going through all the predicates for the object type. Examples of link templates include:
> [0460] All
> [0461] Breaking News (links that refer to time-sensitivity, e.g., "posted in the last")
> [0462] Categorization
> [0463] Definite (non-probabilistic links)
> [0464] Probable (probabilistic links)
> [0465] Annotations
> [0466] In the preferred embodiment, the Open Agent dialog allows the user to select the object to "link to" and, depending on the type of the object, allows the user to browse the object (e.g., from a calendar control if it is a date/time, from a text box if it is text, from the file system if it is a file or folder path, etc.) The wizard user interface also allows the user to preview the results of the query. A temporary SQML entry is created with the current predicate list and that is loaded in a mini-browser window within the wizard dialog box. The user is able to add and remove predicates, and will also have the option of indicating whether he or she wants a union (an "OR") or an intersection (an "AND") of the predicates. The user interface will also check for duplicate predicates.

Omoigui, page 25, paragraphs 459-466.

The cited portion of *Omoigui* discloses link templates that allow a user to navigate predicates for a current object type without going through all the predicates looking for the object type. A wizard user interface allows the user to preview results, as well as add and remove predicates. However, *Omoigui* does not teach or suggest a topic string that is parsed into a prefix and a remainder or a node that represents the topic immediately preceding a wildcard that is defined by the prefix as recited in amended claim 4. In fact, *Omoigui* does not even mention a topic immediately preceding a wildcard or a prefix for defining a node.

The Examiner acknowledges that *Omoigui* fails to teach, "the subscriber is instructed to listen on an associated multicast address," Office Action, page 4. However, the Examiner incorrectly states that *Mane* teaches this feature. While *Mane* does teach a system with a central information broker that serves information via multicast transmissions and does look for requests that include certain information and then instructs the requesting subscriber to listen on a multicast address where the address is associated with and based on the information contained in the request, *Mane* does not disclose having a subscriber **instructed to listen on an associated multicast address associated with the topic in the topic hierarchy which precedes a wildcard by associating the subscriber with the node in the topic tree, wherein the node is defined by the prefix.**

Moreover, *Mane* does not make up for the deficiencies of *Omoigui*. *Mane* teaches:

[0032] The operation of systems 100 and MMM 200, and the processing logic shown in FIG. 3, may be better understood by way of the following example. Assume that a user wants to read the latest news around the world. The user may access information from a CNN website. The user may type http://www.cnn.com in the web browser at his personal computer and get the latest news page on his desktop. But the user may not be the only person requesting the same page. There may be any number of users interested in the same data from CNN at the same time. The CNN server may send such pages almost all the time. And for continuously sending the same pages again and again to a different client each time, the server may have to spend many processing cycles in TCP connection establishment. This may lead to degraded performance of the server, lower connection rates and also lower response time to the client. Same case may be true for real time data requests like real time stock updates.

Mane, page 4, paragraphs 0032.

The cited portion of *Mane* discloses the conversion of unicast connections to multicast sessions for efficiency purposes. *Mane* discloses communicating the url for CNN to a user by sending this information in a multicast address instead of a unicast address in order to avoid the stated problem of having degraded performance of the server, lower connection rates, and also lower response time to the client. However, this portion of *Mane* fails to teach or suggest a wild card, a topic string parsed into a prefix and a remainder, a node defined by the prefix, or a node representing the topic immediately preceding the wildcard as recited in amended claim 4.

In addition, *Mane* states:

[0033] One embodiment of the invention may solve this problem using multicast communications. In multicast communication, a server may send one copy of the data to a group of clients and multicast capable routers in the network copies the data packets and forwards the copies on different links leading to all the clients that are interested in the data.

Mane, page 4, paragraph [0033]

The cited portion of *Mane* discloses instructing a subscriber to listen on an associated multicast address. However, neither this section nor any other portions of the references, teach having a topic string received as the subscription request that is parsed into a prefix and a remainder, wherein the prefix comprises everything in the topic string preceding the wildcard; locating the node in the topic tree defined by the node, wherein the prefix represents a topic immediately preceding the wildcard; and associating the subscriber with the node in the topic tree, wherein the node is defined by the prefix as claimed.

Based on the teachings in the different cited references, no articulated reasoning with any rational underpinning to support the legal conclusion of obviousness can be made when they are considered as a whole by one of ordinary skill in the art. Accordingly, the Examiner has failed to state a *prima facie* obviousness rejection against claim 4.

III.B. *Teaching Away*

In addition, the Examiner has failed to establish a *prima facie* obviousness rejection against claims 1-10 because no reason exists under the standards of *KSR Int'l.* to combine the references, considered as a whole, in the manner suggested by the examiner. No reason exists to combine the references because *Omoigui* teaches away from claims 1-10. A reference may be said to "teach away" from the claimed invention when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. *In re Gurley*, 27 F.3d 551, 553, 31 U.S.P.Q.2D 1130, 1131 (Fed. Cir. 1995).

Omoigui teaches away from claims 1-10 because the addition of *Omoigui* to the proposed combination would vitiate the entire purpose of *Omoigui's* device. *Omoigui* specifically provides that the purpose of his device is to provide:

> Various means for the client to **customize and "blend" Agents** and **the underlying related queries** to **optimize** the presentation of the resulting information.

Omoigui, Abstract (emphasis supplied).

Instructing the user to listen on an address associated with the topic preceding a wildcard by associating the subscriber with a node in the topic tree, wherein the node is defined by the prefix, as recited in amended claim 4, would vitiate the entire purpose of *Omoigui*. *Omoigui* specifies that the purpose of its invention is to provide better means of customization of a user's search results through the use of "Agents", thus providing more extensive and detailed search results for a user. However, *Omoigui* makes no mention of using an Agent to re-direct a user's request from a specific topic to a topic preceding the user's specific topic. In fact, such a disclosure would be contrary to *Omoigui's* stated purpose of providing more customization for the user. In contradistinction, the claimed invention in claim 4 instructs a subscriber to listen on an address associated with the topic within a topic hierarchy preceding a user's wildcard by associating the subscriber with a node in the topic tree, wherein the node is defined by the prefix. Thus, *Omoigui* is teaching away from re-directing a user's search request to a topic address that is broader than what the user was seeking, as recited in amended claim 4. Therefore, given the disparity between the claimed invention, and given *Omoigui's* explicit teachings with respect to the various Agents that are set up to optimize navigation and presentation of the Web, one of ordinary skill would be strongly motivated to avoid combining the claimed invention and *Omoigui*.

Furthermore, *Mane* is directed to a method of managing multicast addresses and converting unicast addresses. Thus, *Mane* provides no reason to countermand the teachings of *Omoigui*.

Because *Omoigui* teaches away from claims 1-10, no motivation exists to combine *Omoigui* and the claimed invention as proposed by the Examiner. Furthermore, *Mane* fails to countermand the teachings of *Omoigui*. Accordingly, the Examiner has failed to state a *prima facie* obviousness rejection against claims 1-10.

IV.   Remaining Claims

Independent claims 1, 7, and 10 have features similar to those presented in claim 4. Therefore, claims 1, 7 and 10 are non-obvious at least for the reasons set forth above.

If an independent claim is non-obvious under 35 U.S.C. §103, then any claim depending therefore is also non-obvious by virtue of their dependency. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Claims 2, 3, 5, 8, 9 depend from claims 1, 4, 7, and 10. Applicants have already demonstrated claims 1, 4, 7, and 10 are not obvious over *Omoigui* in view of *Mane* and are therefore in condition for allowance. Applicants respectfully submit that claims 2, 3, 5, 8, and 9 are also allowable, at least by virtue of their dependency on allowable claims.

V.   Conclusion

Applicants respectfully submit that the subject application is patentable over the cited references and should now be in condition for allowance. The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,

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